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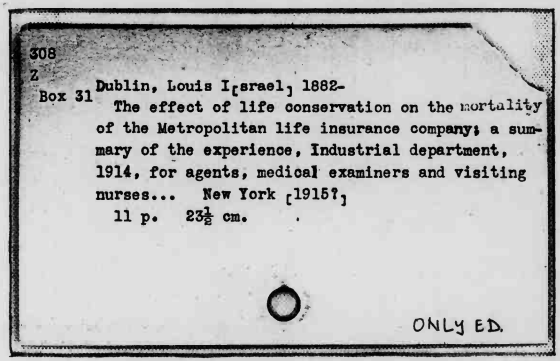
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Box 31 Dublin, Louis I[srael] 1882-
The effect of life conservation on the mortality of the Metropolitan life insurance company; a summary of the experience, Industrial department, 1914, for agents, medical examiners and visiting nurses... New York [1915?]
11 p. 23½ cm.
ONLY ED.

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TECHNICAL MICROFORM DATA

FILM SIZE: 35 mm REDUCTION RATIO: 12:1 IMAGE PLACEMENT: IA (IIA) IB IIB

DATE FILMED: 1/20/97 INITIALS: AC

TRACKING # : 20605

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The effect of life conservation on the mortality of the Metropolitan Life Insurance Company

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The Effect of Life Conservation on the Mortality of the Metropolitan Life Insurance Company

A Summary of the Experience,
Industrial Department, 1914,
for Agents, Medical Examiners
and Visiting Nurses

BY
LOUIS I. DUBLIN, PH.D., STATISTICIAN

METROPOLITAN LIFE INSURANCE COMPANY
NEW YORK

The Effect of Life Conservation on the Mortality of the Metropolitan Life Insurance Company

There are over ten million policy-holders in the Industrial Department of the Metropolitan Life Insurance Company. This number is larger than the population of any State in the Union, New York State not excepted. Metropolitan policy-holders live in every State of the United States and in every province of Canada. They include men, women and children; the white and the colored. They are engaged in every productive pursuit. If we consider the beneficent character of the service rendered by the Company, both as an insurance agency and as a welfare organization, and the intimate relations which exist between the policy-holders and Agents, we are led to view the Company and its members as a great army, whose purpose is to safeguard all under its banners from the consequences of disease and death. The policy-holders form a huge family with common interests and common needs.

It is with this thought in mind that the Company has been engaged in collecting the vital statistics of its policy-holders. There is now at hand the experience of four years covering the mortality of policy-holders as well as the sickness experience indicated by the Visiting Nurse Service. It is believed that the Company's figures are second in importance only to those compiled by the Federal Government; in fact, they are the only data of their kind for the wage-earning population of the United States and Canada. It is the purpose of the Company, at an early date, to put this tabulation in monographic form at the disposal of the general public, of health departments and other officials of the States and cities and of physicians and others interested in the public health and welfare.

At present, it is desirable to give the Field Force, including the Medical Examiners and the Visiting Nurses, a preliminary statement of the essential facts with reference to the life and health of their clients. The Field Force should be aware

of the problems which confront the Officers of the Company in administering present and future welfare programmes. It is hoped that in this way the aims and purposes of Industrial insurance may be materially extended in scope. With the attainment of a better understanding, the various units of the Metropolitan Army will be made even more resourceful and effective in their life conservation work. This article will consider the mortality experience of the Industrial Department of the Company for the year 1914.

Number and Amount of Claims

In 1914, the Company paid 163,339 death claims in the Industrial Department. These claims represented 113,989 deaths; there were, therefore, 143 claims for every 100 deaths. The claims aggregated $19,762,231; in addition, the mortuary bonus payments amounted to $1,687,170. The average amount per claim was $121, and the bonus additions raised this average to over $131. The amount paid per claim is constantly increasing. In 1900 it was only $101. There has thus been an increase of about one-third in the average amount of claim during the last fifteen years, making the amount larger than that required for purposes of burial alone. It is believed that the Industrial claim should more and more play the same part among the industrial classes that the Ordinary does among those in better circumstances, namely, to provide funds for the family during the critical period immediately after the breadwinner's death. The larger the sum the more surely will the family be kept together until the members can more efficiently take care of themselves.

Death Rates

The Industrial Mortality Experience of the Company is eminently satisfactory. In 1914, the death rate of the premium paying business alone was 12.5 per thousand insured. For white lives the rate was 11.8; for colored it was 17.2 per thousand. These rates may be compared, with due caution, with the population rates for white and colored. When proper corrections are made for differences in age distribution it is found that the death rate among Industrial policy-holders is higher than that in the general white population and lower than that of colored persons. Industrial death rates vary considerably in various parts of the country, depending on the age of the

insured, the amount of business written, the prevailing industries and occupations of the people, and other considerations which readily suggest themselves.

Principal Causes of Death

The principal cause of death in this mortality experience is tuberculosis. Of the total deaths referred to above, 18,913, or 17.7 per cent., were due to this cause. Organic diseases of the heart come second with 12,770 deaths, or 12.0 per cent.; pneumonia comes third with 9,267 deaths, or 8.7 per cent. The following table shows the ten principal causes in the order of their importance, with the number of deaths and the percentage of each to the total deaths in the premium paying business:

TABLE 1

Number and Percentage of Deaths from Certain Causes—Metropolitan Industrial Premium Paying Business, 1914

Cause of Death	No. of Deaths	Percentage of Total Deaths
All Causes	106,601	100.0
Tuberculosis (all forms)	18,913	17.7
Organic diseases of the heart	12,770	12.0
Pneumonia (all forms)	9,267	8.7
Bright's disease	8,819	8.3
External causes (accidents and injuries)	8,245	7.7
Cerebral hemorrhage, apoplexy and paralysis	6,734	6.3
Cancer (all forms)	6,454	6.1
Diphtheria and croup	2,379	2.2
Puerperal state	1,833	1.7
Influenza	1,049	1.0

These ten causes combined represent 71.7 per cent. of the total mortality. A large number of minor causes and conditions are responsible for the balance of the mortality, 28.3 per cent.

Some of the above causes of death are represented to a higher degree among Industrial policy-holders than in the community at large. Tuberculosis, for example, plays a much larger part in the Company's experience than in the general population of the United States. This is explained by the fact that the industrial population is exposed to conditions of life and work which more readily result in tuberculous infection. The largest groups among male policy-holders are laborers, teamsters and drivers, clerks and employees in industrial establishments of various sorts; all of these are

subject to a high rate from pulmonary tuberculosis. In like manner, the large number of deaths from accidents and injuries shows distinctly the influence of the unfavorable environment. Certain causes on the other hand, play a smaller part in the Industrial experience. There are no deaths under age 1, and these usually form a large part of the total deaths in the community. The proportion of cancer deaths is still much lower than it is in the general population. This seems to be due to the comparative youth of the Company, and to the fact that there are not as many deaths at the very advanced ages as occur in the population at large.

Ages at Death

The various causes of death do not affect all ages of policyholders equally. The infectious diseases, such as measles, scarlet fever, whooping cough and diphtheria, are distinctly diseases of children; typhoid fever and tuberculosis are diseases of early adult life, and organic heart disease, Bright's disease and cancer are found principally at the higher ages. It is an interesting fact that half of the mortality is evenly distributed above and below age 44, although the average age at death is 42. This figure is different for white and colored persons and for males and females. The colored die earlier than do the whites, and males of both classes have a shorter expectation of life than females. The following table shows the number and per cent. of deaths at the various ten-year age periods; this is for the premium paying business only.

TABLE 2

Number and Percentage of Deaths from All Causes, by Age Period Metropolitan Industrial Premium Paying Business, 1914

Age Period	No. of Deaths	Per Cent. of Total
All Ages	106,601	100.0
Under 10	14,053	13.2
10 to 19	7,270	6.8
20 to 29	11,851	11.1
30 to 39	13,054	12.2
40 to 49	13,746	12.9
50 to 59	16,278	15.3
60 to 69	18,076	17.0
70 to 79	11,985	11.2
80 and over	288	.3

You will note that only 28.5 per cent. of the deaths occurred after age 60, and that 20.0 per cent. of the deaths were among persons under 20. More than half of the mortality, therefore, occurred between the ages of 20 and 60. At these ages policyholders bear the greatest family responsibilities, and it is then that Industrial claim payments serve their greatest social purpose.

Deaths by Color

It has already been shown that the death rate for the colored is higher than for the whites. In 1914, 16.9 per cent. of all claims paid were on colored lives, although colored persons formed only 12.3 per cent. of the total number of policyholders. The difference in the death rates of the two races is especially marked for certain causes of death. Thus there were two and one-quarter times as many deaths from tuberculosis of the lungs per thousand colored as among the whites. Pneumonia is one and four-tenths times as frequent among colored persons as among the whites; typhoid fever is relatively two and one-half times as frequent among the colored. For seven causes of deaths, which together account for half of the mortality, the colored rate is nearly two-thirds higher than the white rate.

Duration of Insurance

The average duration of insurance is, next to the annual death rate, the best index of the quality of the mortality experience of a life insurance company. Policies which lapse by death shortly after they are written represent losses; those of long duration produce gains for the Company. It must be remembered that gains for the Company mean gains for the policy-holders, because the Metropolitan is a mutual Company. When the Company saves on mortality it means lower premiums, or increased insurance for the same premium, or higher dividends. It is, therefore, the constant aim of the management to eliminate by regulation and restrictions, by medical examination, by inspection and by various forms of office control, all applicants whose health, occupation or moral condition is likely to lead to an early death. In the elimination of the unfit much responsibility rests in the first instance on the Field Force, and especially on the Agent who writes the business. He is the guardian at the gateway of the Company. By exercising good judgment he can often save himself and the Com-

pany the trouble and the monetary loss involved in the writing of unfit candidates for insurance.

It should, therefore, interest the Field Force to know that, in 1914, 7,454 claims were paid on premium paying policies less than six months in force; these formed almost 4.9 per cent. of all the claims paid in that year. As many as 13,830 claims, or 9.1 per cent. of all claims paid in 1914, were on policies which were in force under one year, and 32,097 claims, or 21.2 per cent., were paid on policies under three years in force. On the other hand, 49.2 per cent. of all claims were on policies over ten years in force, and 18.2 per cent. on policies over 20 years in force. The last figure shows that the mortality experience of the Company is essentially sound.

Claims under policies of short duration are nevertheless sufficiently numerous to justify further analysis as to the causes which create the conditions described above. The following table shows how the various causes of death are represented among the claims whose policy duration was under one year:

TABLE 3

NUMBER AND PERCENTAGE OF CLAIMS ON POLICIES IN FORCE LESS THAN ONE YEAR CLASSIFIED BY CERTAIN CAUSES OF DEATH METROPOLITAN INDUSTRIAL PREMIUM PAYING BUSINESS, 1914

CAUSE OF DEATH	CLAIMS IN FORCE LESS THAN ONE YEAR		
	Number	Per Cent. of Total All Causes	Amount of Claim Paid
ALL CAUSES	13,830	100.0	$1,079,106.90
"NON-SELECTIVE" CAUSES	6,528	47.2	$334,857.80
Typhoid fever	270	2.0	26,437.50
Measles	370	2.7	8,562.70
Scarlet fever	256	1.9	9,317.40
Whooping-cough	323	2.3	5,778.60
Diphtheria and croup	685	5.0	20,064.00
Cerebro-spinal fever	48	.3	2,705.50
Pneumonia—all forms	2,125	15.4	110,280.00
Diarrhea and enteritis	1,317	9.5	28,084.50
External causes—excluding suicide	1,134	8.2	123,627.60
"SELECTIVE" CAUSES	3,627	26.2	$420,513.20
Tuberculosis—all causes	1,874	13.6	231,731.80
Cancer—all forms	427	3.1	43,628.30
Organic diseases of the heart	741	5.4	78,052.10
Bright's disease	459	3.3	49,674.60
Suicide	126	.9	17,426.40

As might be expected, a large proportion of the claims on policies of short duration are caused by conditions which cannot be foreseen and which are beyond the control of the insured, the Agent or the Medical Examiner. Typhoid fever, the infectious diseases of children, pneumonia, diarrhea and enteritis, and the external causes (suicide excluded) were responsible for about one-half (47.2 per cent.) of all the claims under one year in force. These causes may be considered as "non-selective" in character, and the Company has no complaint to make concerning the high proportion of the deaths from them. It pays such claims cheerfully in every instance. In case of accidental death of an adult it pays the full face of the policy, even if the death occurs within the first six months of insurance. The Company realizes that it is serving its policy-holders most fully at such times. Agents are aware of these facts, and use them in canvassing for insurance.

On the other hand, the large number of cases in which death is due to such "selective" causes as pulmonary tuberculosis, cancer, organic diseases of the heart and Bright's disease, indicates that the policy-holder may have exercised selection, conscious or unconscious, against the Company. These cases point to opportunities which the Agent and Medical Examiner have perhaps neglected to grasp in order to safeguard the Company's interests. The chronic diseases referred to rarely have their onset and development in so short a time as six months or one year. With proper regard for the requirements of the Company as to the health, occupation, mode of life and character of the applicant for insurance, each Agent can help materially to reduce the high figures which are shown in the table above.

IMPROVEMENT IN MORTALITY

The mortality experience of the Company is constantly improving, and at a rate faster than that in the community at large. In the short period between 1911 and 1914 the premium paying business showed a decline of 7.8 per cent. in the mortality of white lives and 3.8 per cent. in the mortality of colored lives. In other words, if the mortality of 1911 had continued through 1914 the Company would have paid 11,630 more claims than it actually did in the latter year. This not only means saving claims but, more important, it means a vast saving of lives to the policy-holders' families and to the

community. This number is so large that it gives encouragement to the various movements in which the Company participates for the conservation of human life.

The reduction in the rate of mortality is much more marked for certain causes of death than for others. Typhoid fever, for instance, had a rate of 19.3 per thousand for white lives in 1911; in 1914, the rate was 13.6, or 29.5 per cent. less. For the group of infectious diseases of children, such as measles, scarlet fever, whooping-cough and diphtheria, there was a reduction of 18.2 per cent. in the three years. Tuberculosis (all forms) shows a reduction of 9.8 per cent. Other acute infections are also strikingly on the decline. In the Registration Area of the United States, in the three-year interval between 1910 and 1913, for white lives, the typhoid fever death rate declined 26.3%, the rate for the four above infectious diseases of children 11.1% and the rate for tuberculosis (all forms) 9.2%. In every case the rate of decline was less than that in the Metropolitan white experience.

The following table for white lives shows the death rates from these causes in the two years 1911 and 1914, respectively, and the reduction that took place in the interval:

TABLE 4

NUMBER AND PERCENTAGE OF DEATHS FROM CERTAIN CAUSES, SHOWING IMPROVEMENT IN MORTALITY—WHITE LIVES METROPOLITAN INDUSTRIAL PREMIUM PAYING BUSINESS 1911 AND 1914

CAUSE OF DEATH	1914			1911			Per Cent. Reduction in 3 Yrs.
	No. of Deaths	% of Total Deaths	Rate per 100,000	No. of Deaths	% of Total Deaths	Rate per 100,000	
Typhoid fever	1,106	1.3	13.6	1,306	1.6	19.3	29.5
Acute infectious diseases of childhood (measles, scarlet fever, whooping-cough, diphtheria and croup)	4,160	4.8	51.3	4,243	5.3	62.7	18.2
Tuberculosis (all forms)	14,271	16.4	176.1	13,221	16.6	195.3	9.8
Acute & chronic bronchitis	892	1.0	11.0	976	1.2	14.4	23.6
Pneumonia (all forms)	7,696	8.8	95.0	7,335	9.2	108.4	12.4
Cirrhosis of the liver	1,126	1.3	13.9	1,142	1.4	16.9	17.8
External causes	6,958	8.0	85.9	6,467	8.1	95.6	10.1
TOTAL ABOVE CAUSES	36,209	41.5	446.8	34,690	43.5	512.6	12.8

This improvement affects an important part of the mortality, as is shown by the fact that the above causes of death constituted 43.5 per cent. of the total white mortality in 1911. The rate for all these causes combined was 12.8 per cent. less in 1914 than in 1911.

No single agency can be said to have brought about the remarkable improvement in our mortality. The past few years have seen radical changes in the attitude of communities toward the problems of life and health of their citizens. The infectious diseases are being more and more controlled by cities and States and the Federal Government through sanitary measures. But it should be noted that the improvement found in our experience is uniformly greater than in the population at large. This strongly suggests that the educational campaign for better personal hygiene which the Company has developed among policy-holders, and especially the work of the Nursing Service, are already bearing fruit in improving the mortality situation. The expectation is largely confirmed by the very significant finding that the causes of death which have shown the greatest reduction in our mortality are those which are most prominently represented in the records of the Visiting Nurse Service. The Service has, from the very beginning, placed the greatest stress on the acute diseases, like pneumonia and typhoid fever, and has given only secondary attention to the chronic conditions, like cancer and heart disease. It is very gratifying, therefore, to find that the improvement which occurs in our mortality reflects the administrative policy of the Company in the organization of its Nursing Service. It is possible that the near future will see changes in the Service which will promise even greater returns in life saving.

The efforts of the Company and of the other organizations engaged in improving the public health should be considered as having just begun. The Industrial insurance Agent will occupy a very advantageous position in the future campaign. He can distribute health literature among his families. He can refer every suitable case on his debit for nursing treatment. He can aid the local health officer in publicity campaigns for more funds with which to conduct his work. He can help report births and deaths. He can urge mothers to attend infant welfare clinics and thus save child life. All of this, and more, properly falls within the scope of the Industrial insurance Agent's work to-day. It is through such activity that the movement for life conservation will receive its greatest advances. The future is full of promise.

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